

## ABSTRACT:

The invention relates to a vertical field type MRI apparatus provided with a superconducting coil system 20a, 20b for generating a substantially homogeneous magnetic field in an imaging volume 18 of the apparatus. The coil system includes a circular outer coil 28 and a supplementary coil 30 which is positioned in the same plane 32 as and within the  
5 outer coil, which coils conduct opposite currents. The ratio  $D_a/D_o$  of the diameter  $D_a$  of the supplementary coil to the diameter  $D_o$  of the outer coil lies between 0,7 and 0,9. Further coils 34 to 38, 40 to 46 for making the field even more homogeneous are preferably located on a conical surface 48, 50 within the first mentioned coils 28, 30 in such a manner that a recess is formed in which a conically shaped gradient coil system 52 can be accommodated, with the  
10 result that the expensive outer coil 28 and the supplementary coil 30 can be arranged at an as short as possible distance from the space for receiving the patient to be examined.

Fig. 2